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## Original Article

# Uterine artery embolisation for uterine fibroids: Our experience at a tertiary care service hospital



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## ABSTRACT

**Background:** Uterine artery embolisation (UAE) has evolved as a minimally invasive and effective alternative, treatment modality for women with symptomatic fibroids. We discuss our initial experience of UAE in the management of symptomatic fibroids.

**Methods:** Twenty five symptomatic patients of uterine fibroids were treated with UAE by selectively cannulating and injecting poly vinyl alcohol particles into the uterine arteries. Post treatment follow up was done at 2 and 6 months respectively.

**Results:** Pre-treatment, the sizes of fibroids were between 3.9 and 10.9 cm (mean 7.4) on ultrasonography. Of the total 25 patients, 49 uterine arteries were embolised with a technical success rate of 98%. Menorrhagia persisted in 7 patients, dysmenorrhea in 4 patients and pressure symptoms in 2 patients respectively in follow up study of six months which corresponds to a reduction in symptoms by 68% for menorrhagia, 71% for dysmenorrhoea and 75% for those with pressure symptoms respectively. At 2 months follow-up post embolisation, the mean diameter of the fibroid was 4.03 cm (range 2–5.2 cm) and at 6 months 3.2 cm (range 1.3–4.1 cm), corresponding to size reduction of 45.5% and 57%, respectively. Follow up with ultrasonography at 2 and 6 months period showed successful fibroid reduction in 24 patients with corresponding reduction in the symptomatology. One patient remained symptomatic with increase in fibroid size and had to undergo hysterectomy.

**Conclusion:** Uterine artery embolisation can be considered as an alternative to hysterectomy in appropriately selected symptomatic patients of uterine fibroids.

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## Introduction

Uterine fibroids (UF) are the most common benign tumor of the uterus in the reproductive age group with an incidence

ranging from 40 to 70%.<sup>1,2</sup> UF, when small, are frequently asymptomatic. However, a variety of disturbing signs/symptoms like menorrhagia, abdomino-pelvic pain, urinary complaints, infertility etc are known to occur depending on the

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size and location of such fibroids. Traditionally, hysterectomy has been considered as the definitive mode of treatment for symptomatic UF. However, hysterectomy has its own share of morbidity and complications. In the quest of reducing morbidity a variety of semi-invasive and uterus preserving surgeries have been developed in the last few decades besides medical treatment. Medical therapy with progestational compounds has not been conclusively proven to benefit the patients of symptomatic UF.<sup>3,4</sup> Uterine artery embolisation (UAE) has fast become an increasingly acceptable minimally invasive alternative treatment option with uterus preservation for symptomatic UF.<sup>5–7</sup> Significant improvement in quality of life and clinical response has been documented by various authors from time to time.<sup>6,8,9</sup> We present our experience of UAE in treating symptomatic UF at a tertiary care service hospital.

## Material and methods

This was a prospective longitudinal study conducted over a period of approximately three years (2003–2006) wherein 25 female patients with symptoms related to UF were treated with UAE by selectively cannulating and injecting poly vinyl alcohol (PVA) particles into the uterine arteries bilaterally.

### Inclusion criteria

The study population included female patients in the reproductive age group having symptomatic UF and were willing for complete follow-up study. Informed consent was taken from each subject. In addition, all patients included in this study had normal Pap smear in last twelve months with regular menstrual cycles and normal kidney function. They also agreed not to use any type of hormonal contraception from three months pre-treatment and throughout the study up to the completion.

### Exclusion criteria

Patients who were pregnant or desiring pregnancy were not included in the study population. The exclusion criteria were

extended to patients with known gynecologic malignancy or pre-malignancy status, adenomyosis, pelvic infection or history of pelvic inflammatory diseases. Patients on any drug treatment for UF were not included in the group. Other exclusion criteria were undiagnosed extrauterine pelvic mass, coagulopathy disorder, history of pelvic irradiation, uterine A–V fistula and patients with allergy to iodinated contrast.

### Equipment

Pre and post procedure sonography was done for all patients using 3.5 and 5 MHz transabdominal probes [Wipro GE, Logic 400 or 500]. UAE procedure was carried out using SIEMENS 1000 mA Digital Subtraction Angiography Machine.

### Procedure of UAE

Arterial access was gained in all patients percutaneously via the transfemoral route. Arteriography was performed for uterine and ovarian artery to delineate the vascular supply of the fibroids. Selective catheterization of the contra-lateral internal iliac artery using a Cobra catheter was done under fluoroscopic guidance. The Cobra catheter was advanced into the contralateral uterine artery and selective angiography performed. Subsequently, the catheter was advanced into the transverse portion of the uterine artery with the help of a guide wire and position checked angiographically (Fig. 1a). Poly vinyl alcohol particles (255–500 micron size) were injected until stasis of blood flow was achieved. The end point was to achieve embolisation of the branches to the fibroids but preserve flow in the main uterine artery (Fig. 1b). The catheter was then placed into the ipsilateral uterine artery and embolisation procedure repeated. This was achieved by forming a Waltman loop or by exchanging the Cobra catheter for a Simmons or Shepherds crook catheter (Fig. 2a,b).

### Post procedure management

Adequate hydration, analgesics, antiemetic therapy and antibiotics were administered. After discharge, patients were prescribed to take oral antibiotics and analgesics for five days



Fig. 1 – (a): Selective left uterine arteriogram showing arterial supply to the fibroid pre embolisation (b) post embolisation.

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